DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-010222
Date Inspected: 18-Nov-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

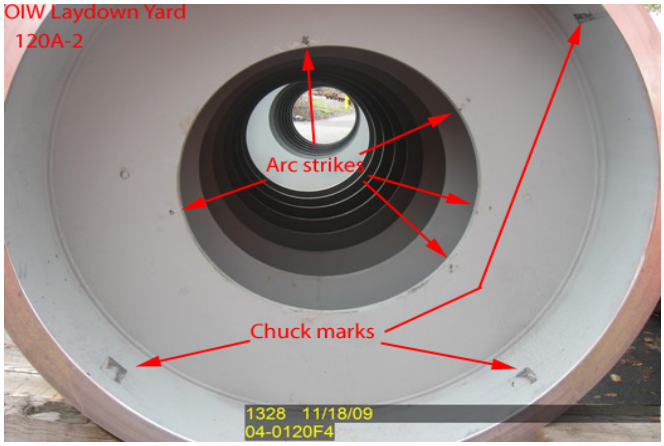
The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

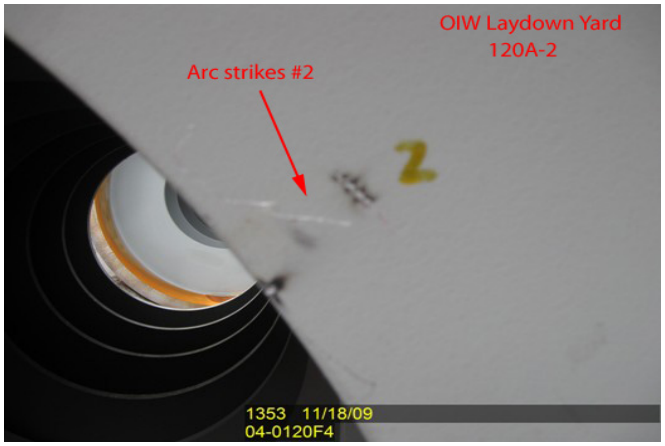
OIW Laydown Yard
Hinge-K Pipe Beam Fuse Assembly 120A-2: 11/18/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noted that this assembly 120A-2 had been previously picked up by OIW, from AG machine shop and placed in the laydown yard and was sitting idle, pending the TIG weld repairs on the overlay. See summary of conversations below for additional information.

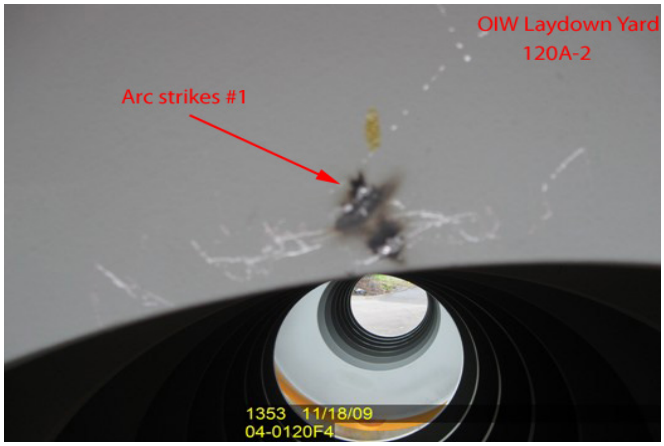
AG Machining
Hinge-K Pipe Beam Fuse Assembly 120A-1: 11/18/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector arrived at AG Machining, on this date and noticed that OIW had previously transferred fuse assembly 120A-1, from OIW Vancouver, WA. painting facility, to AG Machine shop and this assembly had been placed in a horizontal lathe, in preparation for final machining. QA Inspector spoke with AG machinist and AG explained that lathe set-up, circumference and variations of flatness had been previously measured and AG was waiting for OIW to confirm measurements and release, to begin the 1st cut pass, for final machining. AG explained that OIW would possibly arrive in the afternoon, on this date, to confirm measurements and release. AG

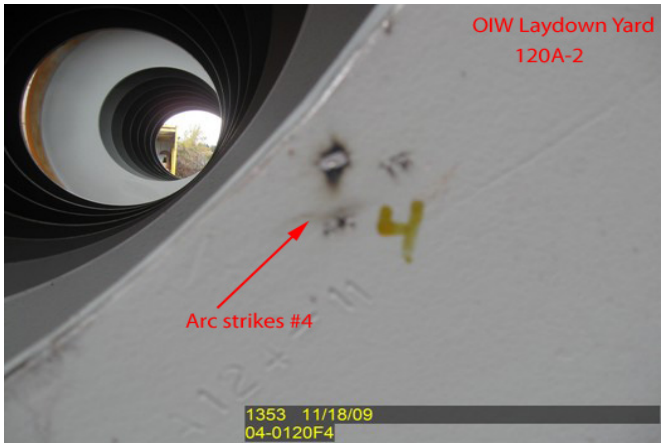
explained that the 1st cut pass will be set to a depth of approximately .150” (4mm) and will require additional cut passes (2-3), to achieve the required final, outside diameter measurement. AG explained that the machining will be closely monitored during the machining and OIW will be notified of any visual indications in the overlay and OIW will then decide how to proceed with overlay repairs. See attached pictures below.
Note: QA Inspector noted that OIW had arrived at AG Machine shop and picked up fuse assembly on 11/17/09 and dropped off the above mentioned fuse assembly 120A-1, at AG Machine shop. QA Inspector noted that OIW had placed the assembly 120A-2 in the laydown yard area and would eventually transfer to Bay 6 and perform the TIG weld repairs (approximately 30) on the overlay. QA Inspector noted that once the repairs are completed, OIW will then apply one more ESW 316L welding pass and then send back to AG for final machining, to meet contract requirements of a finished diameter (1920mm +/- 1mm)/final surface finish of .8µm.

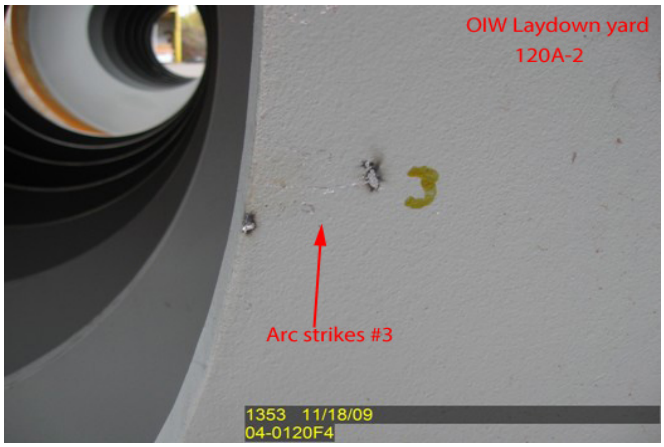
Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.
The QA Inspector observed at Oregon Iron Works: 2 OIW production personnel and 2 QC Inspectors.
The QA Inspector observed at AG Machine shop: 1 machinist and 1 supervisor.
The QA Inspector noted that no work was performed at OIW Vancouver paint shop.











Summary of Conversations:

QA Inspector spoke with Lead QA Inspector Joe Adame and Mr. Adame had explained that arc strikes were noticeably present on the internal ring stiffener (a124-11), on fuse assembly 120A-2. Mr. Adame explained that the arc strikes were probably caused by the welder not being able to achieve a sufficient ground through the zinc primer coat, during the TIG weld repairs, which were previously performed by OIW, at AG Machine shop, on the exterior stainless steel overlay. Mr. Adame explained that an e-mail was sent out, with pictures and OIW production/QC was notified of the arc strikes and that corrective action should be taken in the future, to avoid the arc striking problem. Mr. Adame also stated that the arc strikes will need base metal repairs/repainting and also the

areas where the internal chucks had been present, during the machining process. QA Inspector took photographs of the above mentioned arc strikes, as shown above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer